```
CTCAACCACAGACTACACTTGCTGAACTGGCTCCTGGGGCCATGAGGCTGTCACTGCCAC
+---------+---------+---------+---------+---------+---------
GAGTTGGTGTCTGATGTGAACGACTTGACCGAGGACCCCGGTACTCCGACAGTGACGGTG
                                          M  R  L  S  L  P  L

TGCTGCTGCTGCTGCTGGGAGCCTGGGCCATCCCAGGGGGCCTCGGGGACAGGGCGCCAC
+---------+---------+---------+---------+---------+---------
ACGACGACGACGACGACCCTCGGACCCGGTAGGGTCCCCCGGAGCCCCTGTCCCGCGGTG
   L  L  L  L  L  G  A  W  A  I  P  G  G  L  G  D  R  A  P  L

TCACAGCCACAGCCCCACAACTGGATGATGAGGAGATGTACTCAGCCCACATGCCCGCTC
+---------+---------+---------+---------+---------+---------
AGTGTCGGTGTCGGGGTGTTGACCTACTACTCCTCTACATGAGTCGGGTGTACGGGCGAG
   T  A  T  A  P  Q  L  D  D  E  E  M  Y  S  A  H  M  P  A  H

ACCTGCGCTGTGATGCCTGCAGAGCTGTGGCTTACCAGATGTGGCAAAATCTGGCAAAGG
+---------+---------+---------+---------+---------+---------
TGGACGCGACACTACGGACGTCTCGACACCGAATGGTCTACACCGTTTTAGACCGTTTCC
   L  R  C  D  A  C  R  A  V  A  Y  Q  M  W  Q  N  L  A  K  A

CAGAGACCAAACTTCATACCTCAAACTCTGGGGGGCGGCGGGAACTGAGCGAGTTGGTCT
+---------+---------+---------+---------+---------+---------
GTCTCTGGTTTGAAGTATGGAGTTTGAGACCCCCCGCCGCCCTTGACTCGCTCAACCAGA
   E  T  K  L  H  T  S  N  S  G  G  R  R  E  L  S  E  L  V  Y

ACACGGATGTCCTGGACCGGAACTGCTCCCGGAACTGGCAGGACTACGGAGTTCGAGAAG
+---------+---------+---------+---------+---------+---------
TGTGCCTACAGGACCTGGCCTTGACGAGGGCCTTGACCGTCCTGATGCCTCAAGCTCTTC
   T  D  V  L  D  R  N  C  S  R  N  W  Q  D  Y  G  V  R  E  V

TGGACCAAGTGAAACGTCTCACAGGCCCAGGACTTAGCGAGGGGCCAGAGCCAAGCATCA
+---------+---------+---------+---------+---------+---------
ACCTGGTTCACTTTGCAGAGTGTCCGGGTCCTGAATCGCTCCCCGGTCTCGGTTCGTAGT
   D  Q  V  K  R  L  T  G  P  G  L  S  E  G  P  E  P  S  I  S

GCGTGATGGTCACAGGGGGCCCCTGGCCTACCAGGCTCTCCAGGACATGTTTGCACTACT
+---------+---------+---------+---------+---------+---------
CGCACTACCAGTGTCCCCCGGGGACCGGATGGTCCGAGAGGTCCTGTACAAACGTGATGA
   V  M  V  T  G  G  P  W  P  T  R  L  S  R  T  C  L  H  Y  L

TGGGGGAGTTTGGAGAAGACCAGATCTATGAAGCCCACCAACAAGGCCGAGGGGCTCTGG
+---------+---------+---------+---------+---------+---------
ACCCCCTCAAACCTCTTCTGGTCTAGATACTTCGGGTGGTTGTTCCGGCTCCCCGAGACC
   G  E  F  G  E  D  Q  I  Y  E  A  H  Q  Q  G  R  G  A  L  E

AGGCATTGCTATGTGGGGGACCCCAGGGGGCCTGCTCAGAGAAGGTGTCAGCCACAAGAG
+---------+---------+---------+---------+---------+---------
TCCGTAACGATACACCCCCTGGGGTCCCCCGGACGAGTCTCTTCCACAGTCGGTGTTCTC
   A  L  L  C  G  G  P  Q  G  A  C  S  E  K  V  S  A  T  R  E
```

FIG. 1A

```
AAGAGCTCTAGTCCTGGACTCTACCCTCCTCTGAAAGAAGCTGGGGCTTGCTCTGACGGT
+---------+---------+---------+---------+---------+---------
TTCTCGAGATCAGGACCTGAGATGGGAGGAGACTTTCTTCGACCCCGAACGAGACTGCCA
  E  L  *

CTCCACTCCCGTCTGCAGGCAGCCAGGAGGGCAGGAAGCCCTTGCTCTGTGCTGCCATCC
+---------+---------+---------+---------+---------+---------
GAGGTGAGGGCAGACGTCCGTCGGTCCTCCCGTCCTTCGGGAACGAGACACGACGGTAGG

TGCCTCCCTCCTCCAGCCTCAGGGCACTCGGGCCTGGGTGGGAGTCAACGCCTTCCCCTC
+---------+---------+---------+---------+---------+---------
ACGGAGGGAGGAGGTCGGAGTCCCGTGAGCCCGGACCCACCCTCAGTTGCGGAAGGGGAG

TGGACTCAAATAAAACCCAGTGACCTCAAAAAAAAAAAAAAAAAAAAAAAAA
+---------+---------+---------+---------+---------+--
ACCTGAGTTTATTTTGGGTCACTGGAGTTTTTTTTTTTTTTTTTTTTTTTTT
```

FIG. 1B

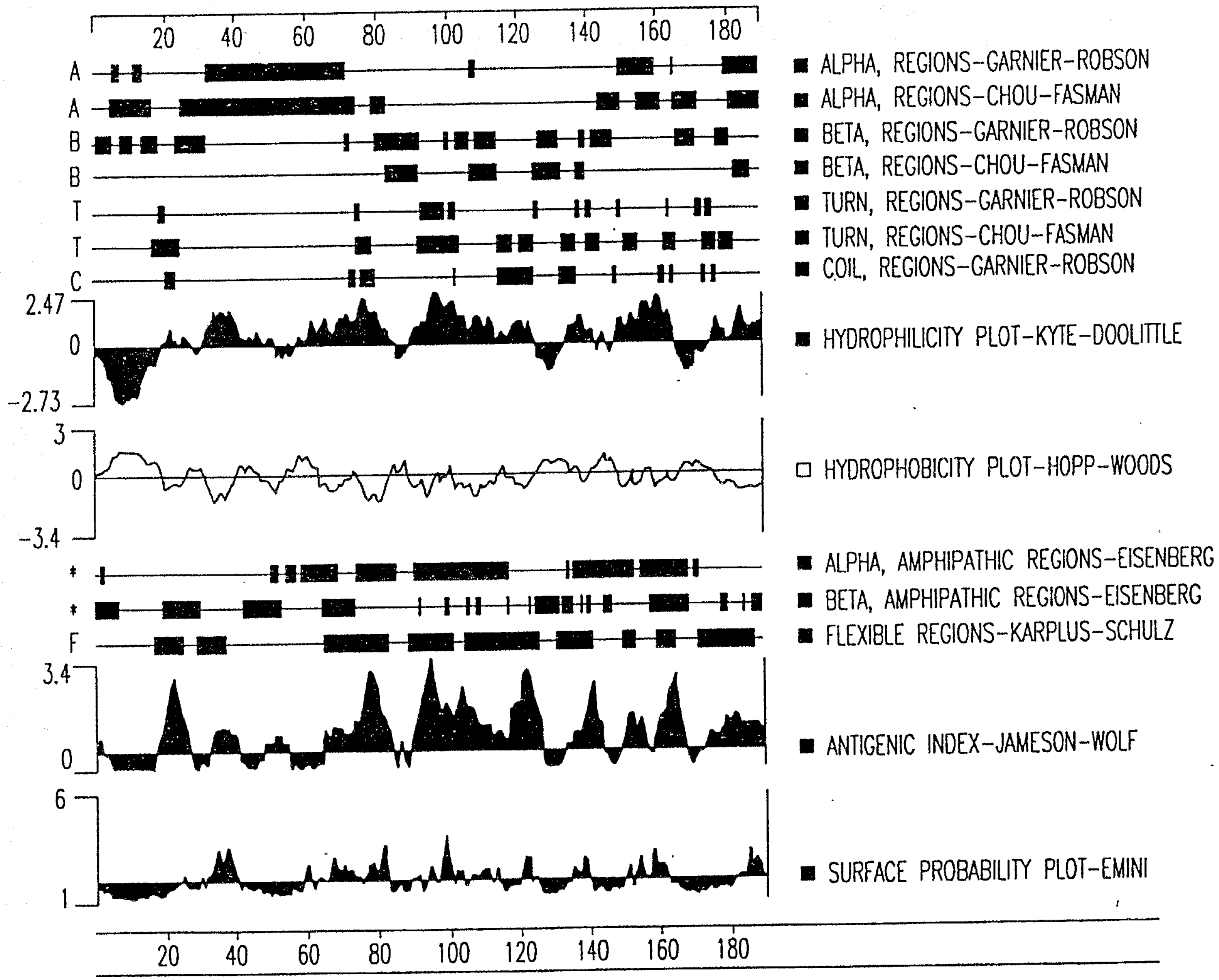
20
40
60
80
100
120
140
160
180
A
A
B
B
T
T
C
2.47
0
-2.73
3
0
-3.4
*
*
F
3.4
0
6
1
■ ALPHA, REGIONS-GARNIER-ROBSON
■ ALPHA, REGIONS-CHOU-FASMAN
■ BETA, REGIONS-GARNIER-ROBSON
■ BETA, REGIONS-CHOU-FASMAN
■ TURN, REGIONS-GARNIER-ROBSON
■ TURN, REGIONS-CHOU-FASMAN
■ COIL, REGIONS-GARNIER-ROBSON
■ HYDROPHILICITY PLOT-KYTE-DOOLITTLE
□ HYDROPHOBICITY PLOT-HOPP-WOODS
■ ALPHA, AMPHIPATHIC REGIONS-EISENBERG
■ BETA, AMPHIPATHIC REGIONS-EISENBERG
■ FLEXIBLE REGIONS-KARPLUS-SCHULZ
■ ANTIGENIC INDEX-JAMESON-WOLF
■ SURFACE PROBABILITY PLOT-EMINI

FIG.2